

Journal of Mycology

VOLUME 8 — DECEMBER 1902

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A NEW GENUS OF FUNGI.

A. P. MORGAN.

The following unique genus and species I have discovered in my range the present autumn. It necessitates an additional section, *HYALODICTYAE* in the *Tuberculariaceae* of Saccardo's *Sylloge Fungorum*.

SPOROCYSTIS CONDITA Morgan gen. & sp. nov.—Stroma large, subglobose, fleshy, white, with a mycelium of slender white filaments; the spores a dense superficial layer. The pellucid hyphae compacted into a soft parenchymatous tissue, rich in fatty globules; the spores borne on the more or less distinct extremities. Spores sub-globose, white, 50-70 mic. in diameter, each composed of many small spherical cells, 9-11 mic. in diameter.

Growing on old leaves in woods; Preston, Ohio, October 1902. The stromata usually scattered, 1-2 mm. in diameter, occasionally two or three confluent. The dry spore shows best the cells of which it is composed. The stroma, mycelium and spores all abound in oil-globules as in the *Entomophthoraceae*; these are best exhibited in a drop of water.

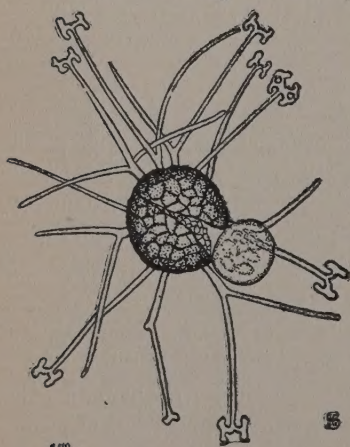
INTERESTING VARIATIONS IN THE APPENDAGES OF PODOSPHERA OXYACANTHAE (DC.) De B.

J. G. SANDERS.

While examining some specimens of the Erysiphaceae collected in October at Newark, O., I found upon leaves of cultivated cherry a *Podospheera oxyacanthae* with a large proportion of the perithecia bearing compound appendages. A few of the compound appendages were perfectly developed, but in the majority of cases one of the branches would be scarcely or not at all developed at the apex. The appendages varied in length from one to four times the diameter of the perithecia; the branching seemingly not affecting the length, as in two cases of tri-compound appendages, they were of maximum length with one branch three times dichotomously branched at the apex. In only two cases I found two asci in one perithecium, which precludes the idea of malformation of the perithecia as a cause of the compound appendages.

In one slide preparation of about fifty (50) perithecia, the following was noted:

Perithecia bearing one compound appendage.....	12
Perithecia bearing two compound appendages.....	7
Perithecia bearing three compound appendages.....	3
Perithecia bearing four compound appendages.....	1
Perithecia bearing six compound appendages.....	1
Perithecia bearing one tri-compound appendage.....	2



The accompanying figure, drawn with an Abbe camera lucida, amplification 110 diam, shows a perithecium bearing one tri-compound and five bi-compound appendages. It, however, contained a single ascus and the normal number (8) of ascospores of normal size. The majority of the appendages were branched near the perithecia, and only a few very near the apex, while many bore nodules or incipient branches at various locations. An examination of specimens from several other localities, resulted in finding, only rarely, a compound appendage.

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NOTES ON UREDINEAE. I.

E. W. D. HOLWAY.

PUCCINIA COLUMBIENSIS. — In July 1891, J. Macoun collected at Banff, Canada, a rust which he sent to J. B. Ellis as on *Oenothera biennis*. This was distributed to correspondents as *Puccinia tuberculans* E. & E., but published as *Puccinia columbiensis* E. & E. I collected at Banff in 1901, and found a *Puccinia* on *Troximon glaucum* which proved to be Macoun's plant, and a comparison of the specimens sent me by Mr. Ellis showed that his host plant was also *Troximon*. To be certain that the type was the same thing I asked Prof. Underwood to look it up. There are two specimens in the Ellis Herbarium. "*Puccinia columbiensis* E. & E., I, on *Oenothera biennis*, Cypress Hills, Assinaboine, J. Macoun," and "*Puccinia columbiensis* E. & E., III, on *Oenothera biennis*, Banff, J. Macoun." Mr. Rydberg kindly examined the hosts and considers the first *Solidago mollis*, and the second *Troximon glaucum*, or *Troximon parviflorum*.

PUCCINIA SUFFUSCA. — In the "Catalogue des plantes que la societe botanique de Copenhague peut distribuer au printemps 1881," a rust was offered under the name of *Puccinia Pulsatillae* Rostr., but without description. Specimens have since been issued under this name in Sydow, *Uredineen*, No. 1529, and in Vestergren, *Micromycetes rariores selecti*, No. 316, both collected in Bohemia on *Pulsatilla pratensis*. Vestergren, in *Bot. Notiser*, 1902:269, quotes from a letter written by the collector, Fr. Bubák, as follows: "Durch grössere grobwärzigere Sporen, deren Zellen nicht kuglig, sondern elliptisch bis länglich sind (besonders die Bazalzelle), ebenso durch spätere Entwicklungszeit von *Puccinia fusca* (Relh.) Wint. verschieden."

This seems to be a good species, but the name has been used by Kalchbrenner, 1865, *Math. s. termiszett. Közlemenyek* 3:307, for a different *Puccinia*. This necessitates a new name for the plant and *Puccinia suffusca* is offered for it. *Puccinia fusca* seems to occur in the United States on *Anemone nemorosa* only. I have examined *P. suffusca* on *Pulsatilla hirsutissima*, Decorah, Ia. Holway; Ute Pass, Col. Trelease; Helena, Mont., Kelsey. On *Anemone parviflora*, Col. Crandall; *Anemone multifida*, Helena, Mont., Kelsey. In addition to the characters noted by Bubák, the species has numerous one-celled spores, which are quite variable in form and size, and the spores are also darker in color. In all the specimens examined there is a very distinct difference in the markings of the epispore. Under a high power the tubercles of *P. fusca* appear like dots, quite uniform in size and evenly distributed over the surface. Those of *P. suffusca* are longer, irregular, and often united.

In this connection it may be of interest to republish Mr.

Relhan's first notice of *Puccinia fusca*. It is in the Gentleman's Magazine, 1793: 414.

"KING'S COLL. CAM., May 15.

MR. URBAN:

The conjurer of Chalgrave's Fern having excited the curiosity of the public, I shall be glad through your means to inform your botanical correspondents that I have found the plant this spring, in great abundance, in Madingley Wood, near Cambridge. It appears to me, from repeated examinations, in all its different stages, to be *Aecidium Fuscum*. Lin. Syst. Nat. Gmelin, p. 1473. It is parasitical on the leaves and sometimes, though rarely, on the petals of *Anemone Nemorosa*. I shall, in a few days, publish a description of it in a third supplement to my "*Flora Cantabrigiensis*," and intend, in a short time, in a separate publication, to give a full history of the plant, illustrated by colored plates. In the meantime, I shall be happy, upon application being made to me by letter, to send twenty specimens of the plant, if so many of your correspondents inform me that they will be acceptable; having ever esteemed the giving away of a curious plant the second pleasure to the original discovery.

Yours, &c.,

R. RELHAN."

The description was published in 1793. *Flora Cantab.* 3rd. Supp.: 36. not as a new species, but as *Aecidium fuscum* 1791. Lin. Syst. Nat. 1473. where it is given as *Aecidium fuscum* Pers. Mr. Relhan does not appear to have carried out his intention as to the separate publication, but he did contribute the specimens for the colored plate in Sowerby, *English Fungi*, 1797, pl. 53. This plate shows a leaf with *Puccinia fusca*, and a plant and leaf with *aecidium*. The *Puccinia* is without doubt the same as Persoon's 1791 *Aecidium fuscum*, otherwise he would have mentioned it in his review of *Lycoperdon Anemones* Poul. He says: (1796. *Neue Ann. d. Bot. Stuck* 13:43.) "Uebrigens habe ich diese Art schon vor der Erscheinung der Transactions dem Herrn Hofrath Gmelin zu der neuen Ausgabe des Linneischen Natursystems unter dem Namen: *Aecidium Anemones*, mitgetheilt. Das von Hrn. Relhan (Sup. Fl. cantabrig.) hierhin gerechnete *Aecidium fuscum*, ist eine ganz andere Art, und vermuthlich eine uredo."

If this view is correct, Persoon should have the credit of it and the name should be *Puccinia fusca* (Pers.) especially as Relhan did not, evidently, separate the *aecidium* and *puccinia*, and Persoon did.

Dr. Winter considered *Aecidium Anemones* Pers. (*Aecidium leucospermum* DC.) to be a state of *Puccinia fusca*. This is probably erroneous. H. T. Soppit made some cultures which led him to the conclusion that this *aecidium* was an *Endophyllum*. His experiments, as reported, (1893. *Jour. of Bot.* : 273) are not conclusive, and need repeating.

OHIO STATIONS FOR MYRIOSTOMA.

JOHN H. SCHAFFNER.

Myriostoma coliformis is regarded as quite a rare species for America. So far as the writer is informed, it has been reported from only four states, widely separated; in Colorado, Florida, Ontario, and South Dakota. The past summer, while on a collecting trip with Professors E. L. Moseley and W. E. Wells, on Cedar Point, Erie Co., Ohio, the writer discovered a large patch of this interesting fungus growing in the rich leaf mold on the bay side of the Point. Most of the specimens were in excellent condition. Later the writer collected the plant at several other places on Cedar Point. Miss L. C. Riddle found it on Green Island, Ottawa Co., where a considerable number of fine specimens were collected by the writer in a short time.

The plants grow in open places under trees and shrubs where there is an abundance of moist leaf mold. It is probably quite common in this region wherever the environment is suitable. The plants found matured the latter part of July and the early part of August and this is probably the best time to look for them.

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NEW SPECIES OF FUNGI FROM VARIOUS LOCALITIES.

BY J. B. ELLIS AND E. BARTHOLOMEW.

AECIDIUM DELPHINII Barthol.—On leaves of *Delphinium scopulorum*. Steamboat Springs, Colo. July 15, 1902. E. Bethel.

Hypophyllous. Spots on the upper side of the leaf yellowish brown with lighter margin. Circinate-clustered, 3-5 mm. diam., deep orange color, irregularly scattered over the leaf. *Aecidia* medium height, 250-350 μ diam., lacerate fringed at first but smooth with even surface when fully expanded. *Spermogonia* few and indistinct. Spores irregular, rough in outline, subglobose or angular, containing one or more bright golden nuclei, 20-25 μ diam. Mr. Bethel in his notes says: "Epidemic this year—there are thousands of acres of it here."

DIAPORTHE (CHOROSTATE) CELASTRINA E. & B.—On dead stems of *Celastrus scandens*. Clyde, Kansas, May 1901. (No. 2856.)

Perithecia in circinate groups of 5-15, globose, $\frac{1}{2}$ mm. diam., horn color inside, slightly raising the surface of the wood, and the short-cylindrical, smooth, subconical-pointed fasciculate ostiola

piercing and slightly raising the bark and finally rising $\frac{1}{2}$ -1 mm. above it; asci clavate-cylindrical, 50-60 x 6-8 μ ; sporidia biserial above, oblong-cylindrical, 2-nucleate, 1-septate, constricted at the septum, 12-15 x 4-5 μ .

CUCURBITARIA JUGLANDINA E. & B. — On dead limbs of *Juglans nigra*. Rooks Co., Kansas, February 1902. (No. 2939.)

Perithecia erumpent in small cespitose clusters of 5-10, less than $\frac{1}{2}$ mm. diam., with an inconspicuous ostiolum; asci cylindrical, short-stipitate, paraphysate, 100-120 x 8-10 μ ; Sporidia uniseriate, elongated-obovate, 3- (becoming 5-7) septate, yellow-brown, mostly constricted in the middle, 15-22 x 8-10 μ , with a more or less continuous longitudinal septum.

Differs from *Cucurbitaria juglandis* Fuckel in its cylindrical asci and smaller sporidia.

SOLENOPEZIZA FIMBRIATA E. & B. — On decorticated logs of *Populus tremuloides*. Steamboat Springs, Colo., July, 1902. E. Bethel. (No. 940.)

Semierumpent, urceolate, thickly scattered, surrounded by the bleached, loosened fibers of the weather-beaten wood, $\frac{1}{2}$ - $\frac{3}{4}$ mm. diam., slate color inside and out, margin deeply fimbriate-toothed. Asci cylindrical, sessile, 50-55 x 7-8 μ . Paraphyses filiform. Sporidia biserial, oblong-elliptical, uniseptate, not constricted, hyaline, 7-8 x 2 $\frac{1}{2}$ -3 μ .

PHYLLOSTICTA JULIFLORA E. & B. — On pods of *Prosopis juliflora*. Austin, Texas, July 1900. W. H. Long, Jr. (No. 442.)

Spots pallid-white, irregular in shape, with a darker, purplish shade around the margin, 2-4 mm. diam., subconfluent. Perithecia pustuliform, about $\frac{1}{2}$ mm. diam., black, flattening out and subhysteriiform when dry, subconfluent. Sporules ovate-oblong, 9-12 x 4-5 μ .

Differs from *P. prosopidis* P. Hen. in its much larger sporules.

DOTHIORELLA MULTICOCCA E. & B. — On bark of *Populus deltoides*. Ft. Scott, Kansas, July 1902. A. O. Garrett. (No. 15.)

Perithecia numerous, minute, 200-250 μ diam., white inside, buried in the black, subcontinuous stroma which occupies the outer layer of the inner bark, their papilliform ostiola raising the epidermis into numerous pustules which are soon ruptured. Sporules oblong-fusoid, hyaline, continuous, 15-20 x 6-7 μ .

This is very distinct from *D. decorticata* E. & E., *D. populnea* Thum., *D. populea* Sacc., and *D. populina* Karst., all of which have much smaller sporules.

SPHAEROPSIS PERSICAE E. & B. — On dead limbs of *Amygdalus persica*. Rooks Co., Kans. Oct. 2, 1901. See *Fungi Columbiani* No. 1590.

Perithecia thickly scattered, globose-depressed, $\frac{1}{4}$ – $\frac{1}{3}$ mm. diam., jet black throughout, deep seated in the inner bark but not penetrating to the wood. Epidermis raised into prominent pustules which are soon ruptured, exposing the ostiola and upper part of the perithecia. Sporules dark brown, elliptical, $8\text{--}12 \times 18\text{--}24 \mu$ often profusely discharged, blackening the surface of the host.

Common and abundant in old peach-tree brush heaps.

SPHAEROPSIS SALICIS E. & B. — On dead shoots of *Salix cordata*. Rockport, Kans. May 1901. (No. 2947.)

Perithecia scattered, globose, $\frac{1}{3}$ – $\frac{1}{2}$ mm. diam., white inside, buried in the inner bark and raising the epidermis into pustules and piercing or rupturing it but not erumpent. Sporules oblong-elliptical, brown, $15\text{--}22 \times 7\text{--}10 \mu$.

Some of the sporules appear globose, but this is owing to their being viewed edwise. Very near *S. populi* E. & B. but the pustules in that species are flattish and the epidermis is generally not ruptured. It differs from *S. salicicola* Pass. in not being erumpent.

CONIOTHYRIUM HELIANTHI E. & B. — On dead stems of *Helianthus annuus*. Rooks Co., Kans., November 1901. (No. 2933.)

Perithecia scattered or cespitose, erumpent-superficial, membranaceous, $200\text{--}300 \mu$ diam., collapsing to cup-shaped or discoid when dry, obscurely perforated above. Sporules elliptical, subolivaceous or cloudy, $4\text{--}5 \times 2\frac{1}{2}\text{--}3 \mu$.

HAPLOSPORELLA SAMBUCINA E. & B. — On dead stems of *Sambucus canadensis*. Louisville, Kans., May 1900. (No. 2820.)

Stroma buried in the bark, orbicular or elliptical, 1–2 mm. diam., raising the bark into pustules and rupturing it but not erumpent; perithecia 5–10 in a stroma, small ($\frac{1}{4}$ mm.). Sporules oblong, $12\text{--}15 \times 6\text{--}7 \mu$.

Cannot be referred to *H. alpina* E. & E. or to *H. seriata* E. & E.

HAPLOSPORELLA WISTARIAE E. & B. — On *Wistaria* in cult. Louisville, Kans. May, 1900. (No. 2821.)

Stroma elliptical or orbicular, 1–2 mm. diam., sunk in the bark which is raised into pustules and ruptured; perithecia small ($120\text{--}150 \mu$) white inside; sporules oblong, $12\text{--}16 \times 6\text{--}7 \mu$.

BOTRYODIPLODIA GOSSYPII E. & B. — On dead stems of *Gossypium herbaceum*. Tuskegee, Ala. July 29, 1901. G. W. Carver. See *Fungi Columbiani* No. 1510.

Perithecia included in a semierumpent, tubercular stroma, 1-2 mm. diam., closely embraced by the ruptured epidermis, or arranged in a single or double series 3-5 mm. long and visible through longitudinal cracks in the bark, or some of them scattered singly. The perithecia are at first white inside and solid but become hollow and dark $\frac{1}{4}$ - $\frac{1}{3}$ mm. diam., with a distinct papilliform ostium; sporules oblong-elliptical, or ovate, 15-22 x 12 μ , hyaline and continuous at first, then dark brown and uniseptate but not constricted.

Diplodia herbarum (Cda.) Lev. has perithecia simply gregarious and must differ from this which has the perithecia mostly in a distinct stroma.

STAGONOSPORA BIFORMIS E. & B. — On small, decorticated limbs of apple tree. Rooks Co., Kans. March, 1902. (No. 2940.)

Perithecia scattered or gregarious, at first covered by the fibers of the weather-beaten wood, soon bare and superficial, globose and about $\frac{1}{4}$ mm. diam. or often compressed, hysteriiform $\frac{1}{2}$ - $\frac{3}{4}$ mm. long, ostium conical or short-cylindrical, sometimes compressed as in Lophiostoma. Sporules cylindrical, hyaline, narrower in the middle but not visibly septate, ends obtusely rounded, 12-15 x $2\frac{1}{2}$ -3 μ .

S. prominula (B. & C.) and S. mali Delacr. are on leaves of apple tree. Both these have sporules of about the same length as our species but in the former they are short-clavate and in the latter fusoid, besides the much smaller (95 μ) perithecia.

CAMAROSPORIUM ASTERICOLUM E. & B. — On dead stems of Aster multiflorus, Rooks Co., Kans. June, 1901. (No. 2884.) See Fungi Columbiani, 1512.

Perithecia subcuticular, ovate-globose, $\frac{1}{4}$ mm. diam., only the apex and papilliform ostium projecting, the surface of the stem around the ostium blackened by the abundantly discharged sporules which are oblong or ovate-elliptical, 3-septate and slightly constricted, slightly compressed, brown, 12-15 x $4\frac{1}{2}$ -7 μ , one or two of the cells divided by a longitudinal septum.

SEPTORIA MUNROAE E. & B. — On leaves of Munroa squarrosa. Rooks Co., Kans. July 22, 1902. (No. 2980.)

Perithecia epiphyllous, punctiform, 100 μ diam., rather abundant, black, subprominent. Sporules long, slender clavate, 80-110 x $2\frac{1}{2}$ -3 μ , hyaline, with 1-3 septa near the broad end, very much resembling the conidia of Cercospora.

TORULA BRACHIATA E. & B. — On dead branches of Symphoricarpus occidentalis. Steamboat Springs, Colo. July, 1902. E. Bethel.

Forming a soft, black, velutinous layer on the dead limbs. Hyphae slender, 200-300 μ long, about 3 μ thick, at first obscurely septate, becoming moniliform, the joints subglobose, 3-4

μ diam. The hyphae send out moniliform branches above, at a large angle.

TORULA SEPULTA E. & B. — On old pine wood saturated with pitch, under side of an old pine board lying on the ground and on a pine post below the surface of the ground. Rockport, Kans. April and June, 1901. (Nos. 2844 and 2900.)

Conidia cylindrical, 2-5-septate, constricted at the septa, 10-22 \times 4-5 μ , 4-5-catenulate, arising directly from prostrate sterile hypha often at a right angle and forming olive-black, sphaeriaeform tufts about $\frac{1}{2}$ mm. diam., thickly scattered and subconfluent.

Allied to *Torula binalis* C. & E. and *T. sparsa* B. & C. the latter of which differs in its conidia 7 μ diam.

STACHYBOTRYELLA n. gen. E. & B. — Differs from *Stachybotrys* in its paler color, creeping habit and absence of any perceptible basidia, the conidia arising directly from the slightly swollen, minutely roughened apex of the fertile hyphae.

STACHYBOTRYELLA REPENS E. & B. — On living leaves of *Verbesina virginica*. Austin, Texas. Oct. 1900. W. H. Long, Jr.

Hypophyllous; the sterile hyphae creeping along the sides of the hairs that clothe the lower face of the leaf and sending out at right angles short (20-35 \times 3 μ), straight, simple, fertile branches which are slightly swollen and roughened with projecting points at the tips. Conidia ovate-globose, 4-5 \times 3 μ , brown, sessile on the roughened tips of the fertile hyphae and forming a compact cluster or head 15-20 μ in diameter. The hyphae are of a yellow-brown, and mostly continuous.

CERCOSPORA CROTONICOLA E. & B. — On leaves of *Croton fruticosus*, Austin, Texas. Oct. 1900. W. H. Long, Jr. (No. 62.)

Hypophyllous, forming small (1-1 $\frac{1}{2}$ mm.) olivaceous patches scattered over the under side of the leaf without any definite spots, except that the upper side of the leaf opposite the patches of hyphae is sometimes a little darker. Fertile hyphae hyaline, filiform, fasciculate, branched above, 100-150 μ long. Conidia oblong-cylindrical or clavate-oblong, olivaceous, 1-3 septate, 30-40 \times 6-7 μ .

Differs from *C. crotonifolia* Cke. and *C. crotonis* E. & E. in its hypophyllous growth and the absence of any definite spots.

CERCOSPORA RATIBIDAE E. & B. — On *Ratibida columnaris*. Rooks Co., Kans. July 19, 1902. (No. 2976.)

Spots dirty brown with a white center, 2-4 mm. across amphigenous. Hyphae in minute, punctiform tufts, scattered over the spots both on the white and on the brown portions, subundulate and notched or shouldered above, continuous, yellow-brown,

30-40 \times 4-4 $\frac{1}{2}$ μ at base, narrower above. Conidia at first cylindrical and slightly curved, then elongated, narrowed above, 30-40 \times 3 $\frac{1}{2}$ -4 μ , 4-8 septate.

MACROSPORIUM ORNATISSIMUM E. & B.—On living leaves of *Sorghum vulgare*, Rooks Co., Kans. Oct. 1901.

On bleached (buff color), extensive areas of the leaf, 5-10 cm. or more in length and often occupying the entire width of the leaf and separated from the green, living portion by a very distinct, narrow, red line. The parasite appears at first in little smoky-colored orbicular patches 2-3 mm. diam., soon confluent. Hyphae in small fascicles, 2-6 together rising from a small cellular base, simple, continuous or faintly 1-3 septate, soon disappearing. Conidia clavate, 30-60 \times 12-16 μ , narrowed below into a yellowish, transparent stipe 10-25 \times 4 μ , often slightly swollen at the lower end. Conidia 4-10 septate with several cells divided by a longitudinal septum, pale, yellow-brown.

CHAETOSTROMA GRAMINIS E. & B.—On dead leaves of some grass, Austin, Texas, Feb. 1901. W. H. Long, Jr. (No. 757.)

Sporodochia convex or plane, black, round or elliptical, $\frac{1}{2}$ -1 mm. diam. Bristles black, straight or slightly curved, opaque, 175-250 \times 6-8 μ . Conidia globose or subelliptical, brown, 6-9 μ diam., about the same as in *C. atterimum* (Cke.) but that species is described as lineate-maculate.

EXOSPORIUM CESPITOSUM E. & B.—On dead (birch?) limbs. Mackinac Island, Mich., July 1899. E. T. Harper. (No 452.)

Sporodochia cespitose in erumpent clusters of 10-20, obovate or of irregular shape, $\frac{1}{2}$ -1 mm. diam., rusty-brown, finally deciduous, subconnate, much resembling the perithecia of *Hypoxylon multifforme* Fr., of horn-like texture and grayish-white within. Conidia at first globose 10-12 μ diam. becoming obovate, 50-60 \times 18-20 μ , brown, the plasma cuboidly divided into 3-4 nuclei, 2-3-pseudoseptate, borne singly on simple, brown, 1-2-septate sporophores 10-20 \times 5-6 μ which thickly clothe the surface of the sporodochia.

Differs from the other described species in its cespitose growth.

THE DISCOMYCETES OF THE MIAMI VALLEY, OHIO.

BY A. P. MORGAN.

The collections of several years enable me at this present time to increase very considerably the list of the species of Discomycetes growing in this region, since the publication of Lea's Catalogue in 1849. Many specimens have been sent to Chas. H. Peck, the State Botanist of New York, and many also to Mr. J. B. Ellis of New Jersey. Upwards of sixty numbers were sent to George Massee of the Royal Herbarium, Kew, England; these were chiefly small Pezizeae not figured in Cooke's Mycographia. Among these Mr. Massee detected several new species which he described and figured. I have also profited much by the papers published recently by Mr. Massee, in the Journal of the Linnaean Society and entitled "Redescriptions of Berkeley's Types of Fungi."

The classification of the Discomycetes is as yet tentative; no two writers divide the order similarly into families and genera. Hence in making up only a catalogue, I have been obliged to survey critically the nomenclature. In doing so I have indicated my notion in regard to genera and species; in many places I have suggested the correct writing of the specific names, on the accepted principle of priority; and I have also been able to describe the spores and give the spore measurements of some of de Schweinitz's little known species.

1. COCCOMYCES TRIANGULARIS Saccardo, Sylloge VIII. 1889.
 Cenangium triangulare Fries, Syst. Myc. II. 1823.
 Peziza triangularis Schweinitz, Syn. Car. 1822.
2. SCHIZOXYLON SEPINCOLUM Persoon, Ann. Wetter. 1810.
 Limboria sepincola Acharius, Acta. Holm. 1815.
 Schizoxylon persoonii Schweinitz, N. A. Fungi. 1834.
3. SCHIZOXYLON OCCIDENTALE E. & E., Journ. Mycol. I. 1834.
 Saccardo, Sylloge VIII. 1889.
4. SCHIZOXYLON CINEREUM E. & E., (Ined.)
5. LICHENOPSIS SPHAEROBOLOIDEA* Schweinitz, N. A. Fungi.
 1834.
6. RHYTISMA PUNCTATUM Fries, Syst. Myc. 1823.
 Xyloma punctatum Persoon, Obs. Myc. 1798.
7. STICTIS RADIATA Persoon, Obs. Myc. 1798.
 LICHEN EXCAVATUS Hoffman, En. Lich. 1784.
 LYCOPERDON RADIATUM Linn. according to Fries, Syst. Myc.
 III is *Diderma stellare*. See also Fries's Index.

8. PROPOLIS FAGINEA Karsten, Myc. Fenn. 1871.
 Stictis versicolor Fries, Syst. Myc. 1823.
 Hysterium fagineum Schrader, Journ. Bot. 1799.
9. MELITTOSPORIUM HYSTERINUM Gillet, Disc. Fr. 1879.
 Stictis hysterina Fries, Syst. Myc. 1823.
10. KARSCHIA LIGNYOTA Saccardo, Sylloge VIII. 1889.
 Patellaria lignyota Fries, S. V. Scand. 1849.
 Peziza lignyota Fries, Syst. Myc. 1823.
11. KARSCHIA STYGIA Massee, Berk. Types. 1901.
 Patellaria stygia B. & C., N. A. Fungi. 1875.
 Patellea stygia Saccardo, Sylloge VIII. 1889.
12. PATELLARIA ATRATA Fries, Syst. Myc. 1823.
 Peziza patellaria Persoon, Synopsis. 1801.
 Lichen atratus Hedwig, Musc. frond. 1787.
 "Typus generis est P. atrata," Fries, S. O. V. 114. The name Patellaria was once used extensively for a genus of Lichens. This species is to be distinguished from P. clavispora by the thicker asci and larger spores. Asci 100-130 x 17-19 mic. Spores 7-10 septate, 36-46 x 8-10 mic. The asci vary in the number of their spores.
13. PATELLARIA CLAVISPORE B. & Br., Am. Nat. Hist. 1854.
 Durella clavispora Saccardo, Sylloge VIII. 1889.
 This species is commonly confused with P. atrata. Asci 90-110 x 11-13 mic. Spores 5-8 septate, 28-35 x 6-8 mic.
14. PATELLARIA TETRASPORA Massee & Morgan n. sp. — Ascophore applanate, usually elliptical, margin very slightly upraised, and more or less distinctly vertically striate, entirely black, 0.5-1 mm. long; asci cylindrical, rather abruptly narrowed into a slender pedicel, apex rounded and slightly thickened, not blue with iodine, 140-160 x 12-14 mic., four spored; spores hyaline, smooth, narrowly clavate, apex blunt, base rather acute, 7-9 septate at maturity 1 seriate, 40-50 x 10-11 mic.; paraphyses numerous, slender tips thickened, deep blackish blue, agglutinated together.
 On dead wood of Juglans cinerea. Preston, Ohio. A. P. Morgan. n. 25. March 1888. Allied to Patellaria clavispora B. & Br. but differs in the tetrasporic asci, and the larger spores.
15. LECIOGRAPHA TRISEPTATA Morgan.
 Mycolecidea triseptata Karsten, Symb. XXVI.
 Patellaria triseptata Saccardo, Sylloge VIII. 1889.
16. LECIOGRAPHA CLAVISPORE Morgan.
 Tryblidium clavisporum Peck, 35th N. Y. Rep. 1882.
 Patellaria clavispora Saccardo, Sylloge VIII. 1889.

This species is also referable to *Pseudotryblidium* Rehm, if it is desirable to multiply genera, but Saccardo's *Patellaria* is not tenable.

17. *HOLWAYA GIGANTEA* Durand, Bull. Torr. Bot. Club. 1901.
Stilbum giganteum Peck, 24th N. Y. Rep. 1871.
Holwaya ophiobolus Saccardo, Sylloge VIII. 1889.
Bulgaria ophiobolus Ellis, Am. Nat. 1883.
18. *URNULA CRATERIUM* Fries, S. V. Scand. 1849.
Dermea craterium Schweinitz, N. A. Fungi. 1834.
Cenangium craterium Fries, Elenchus. 1828.
Peziza craterium Schweinitz, Syn. Car. 1822.
19. *MIDOTIS PLICATA* Phillips & Harkness, Bulletin of the California Academy of Sciences. 1884.
"Resembles *M. irregularis* (Schw.) but differs in the smaller bi-nucleate curved sporidia and the longitudinally plicate hymenium."
20. *TYMPANIS FRAXINI* Fries, Syst. Myc. 1823.
Peziza fraxini Schweinitz, Syn. Car. 1822.
21. *TYMPANIS CONSPERSA* Fries, Syst. Mycol. 1823.
Peziza sphaerioides Roth, Usteri. Ann. 1791.
22. *CENANGELLA VIOLACEA* E. & E., Proc. Ac. Nat. Sc. Philadelphia. 1893.
23. *SCLERODERRIS RUBRA* Morgan, Journ. Cin. Soc. Nat. Hist. 1895.
It is possible that this species is *Rhytidopeziza nigro-cinnabarina*, Spegazzini. Fungi Guarantici I. 1883. This claims to be the real *Patellaria nigro-cinnabarina*, Schweinitz. N. A. Fungi. 1834. Then again the latter is said to be the *Hysterium rufulum* of Sprengel. Schweinitz's species stands as *Blitrydium nigro-cinnabarinum* in Saccardo's Sylloge VIII. 1889.
24. *ORBILIA RUBELLA* Karsten, Myc. Fenn. 1871.
Peziza rubella Persoon, Synopsis. 1801.
25. *ORBILIA VINOSA* Karsten, Myc. Fenn. 1871.
Peziza vinosa Persoon, Synopsis. 1801.
26. *ORBILIA RUBRO-COCCINEA* Saccardo, Sylloge. VIII. 1889.
Calloria rubro-coccinea Rehm, Hedwigia. 1883.
27. *ORBILIA EPIPORA* Karsten, Myc. Fenn. 1871.
var. *major* Spegazzini, F. Arg. 1880.
28. *ORBILIA LEUCOSTIGMA* Fries, S. V. Scand. 1849.
Peziza leucostigma Fries, Obs. Myc. 1815.
29. *ORBILIA XANTHOSTIGMA* Fries, S. V. Scand. 1849.
Peziza xanthostigma Fries, Obs. Myc. 1815.

30. *ORBILIA CRUENTA* Morgan.
Orbilium rufula Masee, Berkeley's Types. 1901.
Peziza regalis C. & E. Grevillea. 1878.
Peziza fibriseda, *Peziza saccharifera* B. & C., N. A. Fungi. 1875.
Peziza cruenta, *Peziza rufula* Schweinitz, N. A. Fungi. 1834.
31. *BULGARIA RUFA* Schweinitz, N. A. Fungi. 1834.
Asci cylindric, with a long slender stalk, the spores obliquely uniseriate, the sporiferous part of the ascus 125-135 x 11-14 mic. Spores simple, hyaline, elliptic-oblong, 18-22 x 9-10 mic.
32. *BURCARDIA TURBINATA* Schmidel, Icones, Tab. LXX.
Peziza sessilis infundibuliformis, etc., Haller, Hist. St. 1768.
Tremella agaricoides Retzius, Act. Holm. 1769.
Elvela pulla Schaeffer, Index, 1774.
Peziza polymorpha Lightfoot, Fl. Scot. 1777.
Polymorphus tremelloides "Naum. diss. Erf. 1782."
Peziza brunnea Batsch, El. Fung. 1783.
Octospora elastica Hedwig, Musc. frond. 1787.
Peziza nigra Bulliard, Champ. 1791.
Peziza inquinans Persoon, Disp. 1797.
Bulgaria inquinans Fries, Syst. Myc. 1823.
33. *ANGELINA CONGLOMERATUS* Fries, S. V. Scand. 1849.
Ascobolus conglomeratus Schweinitz, N. A. Fungi. 1834.
This is said to be the same thing as *Hysterium rufescens* Schw. It is strange that neither Schweinitz nor Fries perceived their identity.
34. *CORYNE PURPUREA* Fuckel, Symb. Myc. 1869.
Elvela purpurea Schaeffer, Index, 1774.
Spores hyaline, fusiform, 3-5 septate, 20-25 x 5-6 mic.
35. *ASCOBOLUS FURFURACEUS* Persoon, Obs. Myc. I. 1796.
Peziza stercoraria Bulliard, Champ. 1791.
Elvella fimetaria Scopoli, Ann. Hist. Nat. 1772.
36. *ASCOBOLUS BRUNNEUS* Cooke, Hedwigia, VI. 1867.
37. *LASIOBOLUS EQUINUS* Karsten, Syn. Arc. 1885.
Peziza equina Muller, Flora Danica.
Peziza papillata Persoon, Synopsis. 1801.
38. *RYPAROBUS PELLETIERI* Saccardo, Mich. I. 1877.
Ascobolus pelletieri Crouan, Ann. Sc. Nat. 1857.
39. *MOLLISIA ATROCINEREA* Phillips, Brit. Disco. 1887.
Peziza atrocinerea Cooke, Fung. Brit. Ser. I. 382.
Peziza Polygoni Lasch., in Rab. Herb. Myc. 1127.

40. *MOLLISIA CINEREA* Karsten, Myc. Fenn. 1871.
Peziza cinerea Batsch, El. Fung. cont. 1789.
41. *MOLLISIA FUSCA* Masee, Fung. Fl. 1895.
Trichopeziza fusca Saccardo, Sylloge. VIII. 1889.
Peziza fusca Schumacher, En. Plant. 1803.
42. *BELONIDIUM ALBUM* Saccardo, Sylloge, VIII. 1889.
Lecanidion album Crouan, Fl. Finist. 1867.

This is truly a *Peziza*; there is little to the ascoma besides the asci and paraphyses. It grows on old hyphae of *Helminthosporium*.

43. *STAMNARIA AMERICANA* Masee & Morgan n. sp. —

Erumpent, gregarious or crowded in clusters of three or four, sessile or with a very short stem-like base, about $\frac{1}{2}$ mm. across and high, thin, translucent, margin scarious, uneven, entirely pale amber when dry, concave; asci clavate, apex rounded, not blue with iodine, 8-spored, $170 \times 15-16$ mic.; spores irregularly 2-seriate, hyaline, smooth, continuous narrowly elliptic-fusiform, often slightly inaequilateral, 2-guttulate, $26-29 \times 7-8$ mic.; paraphyses slender, tips slightly clavate, often branched; excipulum and cortex formed of very slender septate hyphae running from base to margin.

On dead stems of *Equisetum hyemale* Preston, O. Entire fungus delicate, thin, soon collapsing. Readily distinguished from *S. equiseti* in the much larger asci and spores.

44. *HELOTIUM CITRINUM* Fries, S. V. Scand. 1849.
Octospora citrina Hedwig, Musc. frond. 1787.

Helotium confluens Schweinitz, N. A. Fungi, does not seem to be different from this species.

45. *HELOTIUM VIRGULTORUM* Fries, S. V. Scand. 1849.
Phialea virgultorum Saccardo, Sylloge. VIII. 1889.
Peziza virgultorum Vahl, Flora Dan. Tab. 1016.
Octospora fungoidaster Hedwig, Musc. frond. 1787.
Peziza flaviscens, petiolata, etc. Haller, Hist. St. 1768. By Persoon and Fries this species was included as a variety in *P. fructigena*.

46. *HELOTIUM SCUTULA* Karsten, Myc. Fenn. 1871.
Phialea scutula Saccardo, Sylloge, VIII. 1889.
Peziza scutula Persoon, Myc. Eur. 1822.

As defined by later writers there seems little difference between this species and *P. virgultorum* except that it grows on herbaceous stems.

47. *HELOTIUM FRUCTIGENUM* Fuckel, Symb. Myc. 1869.
Peziza fructigena Bulliard, Champ. 1792.

Masee includes this species as a variety in *H. virgultorum*.

48. *HELOTIUM CALYCVLUS* Fries, S. V. Scand. 1849.
Phialea calyculus Saccardo, Sylloge VIII. 1889.
Peziza calyculus Sowerby, Eng. Fungi. 1799.
49. *HELOTIUM DISCRETUM* Karsten, Myc. Fenn. 1871.
 On old pod of *Gleditschia*.
50. *HELOTIUM GALBULA* Karsten, Myc. Fenn. 1871.
Phialea galbula Saccardo, Sylloge, VIII. 1889.
51. *HELOTIUM CROCINUM* B. & C., Cuban Fungi. 1869. Massee, Berk. Types. 1901.
52. *HELOTIUM DELECTABILE* Massee & Morgan n. sp. —
Ascophore stipitate, at first closed by the incurved margin, disc finally plane, clear crimson, permanently marginate, up to 1 mm. broad, externally even, glabrous, whitish with a tinge of pink, narrowing downwards into a short, stout, pale stem; asci 90 x 10 mic., clavate, apex slightly thickened, pore blue with iodine, 8-spored; spores obliquely 1-seriate, hyaline, continuous smooth, narrowly elliptic-fusiform, 12-13 x 4 mic. paraphyses slender, tips scarcely thickened, tinged red.
 On slender twigs. Preston, Ohio, U. S. A. Allied to *Helotium geurnisaci* Crouan.
53. *HELOTIUM CHLORA* Morgan.
Chlorosplenium chlora Massee, Berk. Types. 1901.
Peziza chlora Schweinitz, Syn. Fung. Car. 1822.
Chlorosplenium schweinitzii Fries, S. V. Scand. 1849.
Peziza crocitincta B. & C., Grevillea, I 1872 and III 1875.
Pezizella crocitincta Saccardo, Sylloge, VIII. 1889.
 Specimens examined from Schweinitz, Berkeley and Fries; not by any means uncommon in the United States. The colour ranges from yellowish-green, through clear yellow, to orange or saffron; all shades may sometimes be seen in the same group of specimens." (George Massee.)
54. *CIBORIA RENISPORA* Saccardo, Sylloge, VIII. 1889.
Ciboria sydowiana Rehm, Hedwigia, 1885.
Helotium renisporum Ellis, Bull. Buff. 1875. Massee, Fungus Flora. 1895.
 The spores are not correctly given in the Sylloge. *C. tabacina* E. & Holw. does not appear to be a different species.
55. *CHLOROSPENIUM AERUGINOSUM* De Notaris, Discom. 1864.
Helotium aeruginosum Fries, S. V. Scand. 1849.
Peziza aeruginosa Vahl, Fl. Dan. Tab. 1260.
Helvella aeruginosa Oeder, Fl. Dan. Tab. 534.
Peziza viridissima, etc. Haller, Hist. Stirp. 1768.
Peziza aeruginascens Nylander, Obs. Pez. 1868.

56. *CHLOROSPLENium VIRIDE* Morgan.
Cantharellus viridis Schweinitz, N. A. Fungi. 1834.
Peziza aeruginascens Nylander, Obs. Pez. 1868.
57. *CHLOROSPLENium VERSIFORME* Karsten, Myc. Fenn. 1871.
Helotium versiformis Fries, S. V. Scand. 1849.
Peziza versiformis Persoon, Ic. & Desc. 1800.

The genus *Chlorosplenium* was established by Fries for the reception of *Peziza chlora*, *P. chlorascens* and *P. torta* of Schweinitz under the mistaken notion that "the disk is rendered green-pulverulent by the bursting of the asci and pouring out of the spores." In the same connexion *Peziza aeruginosa* and *P. versiformis* were placed in *Helotium*.

It is doubtful whether *Peziza chlora*, *P. chlorascens*, *P. torta* belong in *Chlorosplenium* as now understood. The generic type at present is rather *Chlorosplenium aeruginosum*, which colors the wood on which it grows a deep verdigris-green.

58. *PEZICULA CARPINEA* Tulasne, S. F. Carp. 1865.
Dermatea carpinea Fries, S. V. Scand. 1849.
Patellaria carpinea Berkeley, Lea's Cat. 1849.
Peziza carpinea Ehrhardt, Pl. crypt. ex. 130. See Persoon, Synops. 1801.
59. *TAPESIA AURELIA* Phillips, Brit. Disco. 1887.
Belonidium auratum Saccardo, Mich. I. 1877.
Arachnopeziza aurelia Fuckel, Symb. Myc. 1869.
Belonidium aurelia De Notaris, Prop. Disc. 1864.
Peziza aurelia Persoon, Myc. Eur. 1822.
60. *TAPESIA ARACHNOIDEA* Saccardo, Sylloge, VIII. 1889.
Peziza candido-fulva Schweinitz, N. A. Fungi. 1834.
Peziza rhabdosperma B. & Br., Ann. Nat. Hist. 1876.
Arachnopeziza aurata Fuckel, Symb. Myc. 1870.
Peziza arachnoidea Schweinitz, N. A. Fungi. 1834.
Mr. Massee determined the specimen as *Tapesia aurata*.

61. *TAPESIA CANDIDO-FULVA* Saccardo, Sylloge, VIII. 1889.
Peziza candido-fulva Schweinitz, N. A. Fungi. 1834.

The ascoma differs from that of *T. aurelia* in the tawny-brown fasciculate hairs on the margin. The asci are cylindric-clavate, 60-70 x 7-8 mic.: the spores are fusiform-clavate, simple or 1-septate, 11-16 x 3 mic.

62. *TAPESIA MOLLISIOIDES* Saccardo, Mich. II. 1880.
Peziza mollisiaeoides Schweinitz, N. A. Fungi. 1834.
63. *TAPESIA SANGUINEA* Fuckel, Symb. Myc. 1869.
Peziza sanguinea Persoon, Disp. 1797.

64. *TAPESIA CAESIA* Fuckel, Symb. Myc. 1869.
Peziza caesia Persoon, Synopsis. 1801.
Peziza lichenoides Persoon, Ic. & Descrip. 1800.
65. *TAPESIA DERELICTA* Morgan sp. nov. — Ascophore subcupulate, more or less irregular, rufescent, externally furfuraceous, seated on a thin white subiculum, close or crowded and sometimes confluent. Asci cylindric, stipitate, 90-100 x 7-8 mic., 8-spored, the spores obliquely uniseriate; paraphyses filiform. Spores cylindric-clavate, hyaline, 1-sepate, 12-15 x 3 mic.
 Growing on old wood and mosses; Preston, Ohio. Ascophore 1-2 mm. in diameter, when fresh closely crowded so as to almost conceal the thin subiculum, but when dry the fleshy cups are much contorted disclosing the white threads between. I suspect this to be the lost *Peziza bloxami* B. & Br.
66. *TAPESIA FUSCA*, *T. rosae*, *T. prunicola*, Fuckel, Symb. Myc. 1869.
Peziza fusca Persoon, Obs. Myc. 1798.
67. *TAPESIA DISCINCOLA* Saccardo, Sylloge, VIII. 1889.
Peziza discincola Schweinitz, N. A. Fungi. 1834.
 Spores 0-1-septate, clavate-oblong, 7-9 x 2-3 mic.
68. *TAPESIA PRUINATA* Saccardo, Sylloge, VIII. 1889.
Peziza pruinata Schweinitz, Syn. Car. 1822.
Peziza conspersa Persoon, Myc. Eur. 1822.
Thelebolus hirsutus De Candolle, Fl. Fr. 1805.
 This seems to me an imperfect Lichen, a *Verrucaria*. It grows commonly on the bark of Grape vines, but I never find any fruit; the vegetation is not fungoid.
69. *LACHNELLA CORTICALIS* Fries, S. V. Scand. 1849.
Peziza corticalis Persoon, Disp. 1797.
70. *LACHNELLA CANESCENS* Phillips, Brit. Disco. 1887.
71. *LACHNELLA RUFO-OLIVACEA* Phillips, Brit. Disco. 1887.
Schweinitzia rufo-olivacea Massee, Fung. Flora. 1895.
Velutaria rufo-olivacea Fuckel, Symb. Myc. 1869.
Peziza fraxinicola B. & Br., Ann. Nat. Hist. 1866.
Peziza rufo-olivacea A. & S., Consp. Fung. 1805.
72. *LACHNELLA PENICILLATA* Morgan.
Trichopeziza penicillata Saccardo, Sylloge, VIII. 1889.
Peziza penicillata Schweinitz, Syn. Car. 1822.
73. *LACHNELLA SOLENIIFORMIS* E. & E., Journ. Mycol. 1888.
Dasyscypha soleniiformis Saccardo, Sylloge, VIII. 1889.
74. *LACHNELLA DEMATICOLA* Phillips, Brit. Disco. 1887.
Trichopeziza dematicola Saccardo, Sylloge, VIII. 1889.
Peziza dematicola B. & Br., Ann. Nat. Hist. 1865.
Peziza escharodes B. & Br., Ann. Nat. Hist. 1872.

75. *LACHNELLA CHLORASCENS* Morgan.
Chlorosplenium repandum Fries, S. V. Scand. 1849.
Peziza chlorascens Schweinitz, N. A. Fungi. 1834.
76. *LACHNELLA ATROFUSCATA* Saccardo, Sylloge. VIII. 1889.
Peziza atrofusca Schweinitz, N. A. Fungi. 1834.
77. *LACHNELLA HYALINA* Phillips, Brit. Disco. 1887.
Pseudohelotium hyalinum Fuckel, Symb. Myc. 1869.
Peziza hyalina Persoon, Disp. 1797.
78. *LACHNUM AGARICINUM* Retzius, Act. Holm. 1769. Flora Scand. 1795.
Lachnella virginica Phillips, Brit. Disco. 1887.
Lachnum virginicum Karsten, Myc. Fenn. 1871.
Dasyscypha virginica Fuckel, Symb. Myc. 1869.
Peziza virginica Batsch, El. Fung. 1783.
79. *LACHNUM CERINUM* Morgan.
Lachnella cerina Phillips, Brit. Disco. 1887.
Heliotium cerinum Karsten, Myc. Fenn. 1871.
Dasyscypha cerina Fuckel, Symb. Myc. 1869.
80. *LACHNUM LUTEO-ALBUM* Morgan.
Dasyscypha luteo-alba Saccardo, Sylloge, VIII. 1889.
Peziza luteo-alba Schweinitz, N. A. Fungi. 1834.

81. *LACHNUM VIRIDULUM* Masse & Morgan n. sp. —

Gregarious, closed at first then expanding until widely cup-shaped, narrowed below into a very short, stout stem-like base, about .5 mm. across, disc dark green, externally pale green and downy, marginal hairs 60-80 \times 3-4 mic., septate; cortex minutely parenchymatous, cells elongated from base to margin; asci cylindrical, apex rounded, 8-spored, 45-50 \times 6 mic., spores 2-seriate, continuous, smooth, hyaline, cylindrical, often slightly curved, 7-9 \times 2 mic.; paraphyses filiform.

On dead wood of *Quercus alba*, Preston, O., readily distinguished by the green colour of every part. Contracted when dry, and looking like minute yellowish-green specks of fluff.

82. *PATELLA SCUTELLATA* Morgan.
Lachnea scutellata Gillet, Disco. 1879.
Humaria scutellata Fuckel, Symb. Myc. 1869.
Octospora hirta Hedwig, Musc. Fround. 1789.
Patella ciliata Roth, Flora Germ. 1788. Wiggers Fl. Hols. 1780.
Elvella ciliata Schaeffer, Index. 1774.
Peziza scutellata Linnaeus, Sp. Pl. 1753.

83. *PATELLA LUTEA* Morgan.
Lachnea stercorea Gillet, Disco. 1879.
Peziza stercorea Persoon, Obs. Myc. 1798.
Peziza lutea Reich. in Besch. Berl. 1775 (?).
Elvella lutea Scopoli, Fl. Carn. 1772.
84. *PATELLA ERINACEUS* Morgan.
Lachnea erinaceus Saccardo, Sylloge, VIII. 1889.
Peziza erinaceus Schweinitz, Syn. Car. 1822.
85. *SEPULTARIA ALBIDA* Morgan.
Lachnea hemispherica Gillet, Disco, 1879.
Peziza hemispherica Wiggers, Fl. Hols. 1780.
Elvela algida Schaeffer Index 1774.
86. *SEPULTARIA SEMITOSTA* Morgan.
Macropodia semitosta Saccardo, Sylloge, VII. 1889.
Peziza semitosta B. & C., N. A. Fungi. 1875.
 According to Massee in Journal Linn. Society, 1876, *Peziza pubida*, B. & C. is a synonym of this species.
87. *GEOPYXIS COCCINEA* Massee, Fungus Flora. 1896.
Sarcoscypha coccinea Saccardo, Sylloge, VIII. 1889.
Lachnea coccinea Gillet, Disco. 1879.
Peziza coccinea Jacquin, Fl. Aust. 1776.
Elvela coccinea Scopoli, Fl. Carn. 1772.
88. *GEOPYXIS FLOCCOSA* Morgan.
Sarcoscypha floccosa Saccardo, Sylloge, VIII. 1889.
Peziza floccosa Schweinitz, N. A. Fungi. 1834.
Sarcocyphi, Martins, was applied to *Peziza stenostorna* Mart., and *P. rhizopus* A. & S. There is no reason for substituting *Plectania*.
89. *GEOPYXIS OCCIDENTALIS* Morgan.
Sarcoscypha occidentalis Saccardo, Sylloge, VIII. 1889.
Peziza occidentalis Schweinitz, N. A. Fungi. 1834.
 This species is given in Lea's Catalogue. The form I find corresponds better to *Geopyxis hesperidea* C. & P. Grevillea, I. 1872.
90. *GEOPYXIS NEBULOSA* Saccardo, Sylloge, VIII. 1889.
Peziza nebulosa Cooke, Mycographia. 1879.
91. *BARLAEINA CONSTELLATIO* — *Barlea constellatio* Saccardo
 Sylloge, VIII. 1889.
Aleuria constellatio Gillet, Disco. 1879.
Peziza constellatio B. & Br. Ann. Nat. Hist. 1875.
92. *HUMARIA OMPHALODES* Massee, Fungus Flora. 1875.
Pyronema omphalodes Fuckel, Symb. Myc. 1869.
Peziza omphalodes Bulliard, Champ. 1792.

93. *HUMARIA SCABRA* Morgan.

Humaria granulata Saccardo, Sylloge, VIII. 1889.

Ascobolus granulatus Fuckel, Symb. Myco. 1869.

Peziza granulata Bulliard, Champ. 1792.

Peziza scabra Müller, Fl. Dan. Tab. 655.

94. *HUMARIA VITIGENA* Massee & Morgan n. sp. — Gregarious, sessile on a broad base, fleshy, 2-3 mm. broad; globose and closed at first, gradually expanding but the extreme margin persistently incurved and minutely silky; externally dingy white, disc glaucous; asci cylindrical apex rounded, plug brown — not blue with iodine, 120 x 12 mic.; spores 8, 1-seriate, broadly elliptical, ends obtuse, hyaline, smooth, 8-8 x 6-6.5 mic.; paraphyses filiform, slightly thickened at the apex.

On dead twigs of *Vitis riparia*, Preston, O. The present species is not a typical *Humaria*, neither can it be considered as agreeing well with any established genus. The excipulum consists entirely of irregularly nodulose cells which are scarcely coloured by iodine but appear refractive as if very thick-walled, and with scarcely any cell contents. Perfectly globose at first, the hymenium gradually developing as in *Bulgaria*. Substance firm, but not at all cartilaginous or gelatinous.

95. *HUMARIA FUSCOCARPA* Morgan.

Phaeopeziza fuscocarpa Saccardo, Sylloge, VIII. 1889.

Peziza fuscocarpa Ellis & Holway, Journ. Mycol. 1885.

96. *PHAEOPEZIZA NIGRANS* Morgan.

Detonia nigrans Saccardo, Sylloge, XIV. 1899.

Peziza nigrans Morgan, Journ. Cin. Soc. Nat. Hist. 1895.

97. *PEZIZA VESICULOSA* Bulliard, Champ. 1792.

Peziza lycoperdoides DeCandolle, Fl. Fr. 1805.

Helvella vesiculosa Bolton, Hist. Fung. 1788.

Elvella lycoperdoides Scopoli, Fl. Carn. 1772.

98. *PEZIZA IRRORATA* B. & C., N. A. Fungi. 1875. Massee, Berkeley's Types. 1896.

This was at first referred to *Peziza repanda*; Massee's description makes the species clear.

99. *PEZIZA PALMICOLA* B. & C. Cuban Fungi. 1869. Massee, Berkeley's Types. 1896.

This grows in a solitary way with me, always on old Hickory trunks; it resembles *Peziza repanda*.

100. *PEZIZA CLYPEATA* Schweinitz, Syn. Car. 1822.

Peziza adnata B. & C. Cuban Fungi. Massee, Berkeley's Types. 1896.

I had always taken this for *Psilopezia numularia* until I got Massee's work; I supposed the three names to be synonyms.

101. PEZIZA NUMULARIA Morgan.

Psilopezia numularia Berkeley, Lond. Journ. 1847. Lea's Catalogue. 1849. Massee, Berkeley's Types. 1896.

Although the type of this species was sent from Cincinnati by Mr. Lea, I do not appear to have collected it, my specimen examined by Mr. Massee being pronounced *Peziza adnata* B & C. Aside from the spores, there should be no confounding the two species; The ascophore of one is parenchymatous and of the other wholly prosenchymatous.

102. PEZIZA NANA Massee & Morgan n. sp. — Gregarious sessile, thin, concave, entirely pale brown when dry, up to 6 mm. across, scurfy-pulverulent externally; asci cylindrical, apex rounded, deep blue with iodine, 8-spored, 350 x 12 mic.; spores broadly elliptical, ends obtuse, hyaline, continuous, epispore densely covered with minute warts, 18 x 10 mic. 1-seriate; paraphyses slender, very slightly thickened at the apex; hypothecium and excipulum formed of very slender, interwoven hyphae, passing into a cortex of small parenchymatous cells.

On the ground; Preston, O. The asci and spores are large in proportion to the size of the ascophore.

103. PEZIZA SUCCOSA Berkeley, Ann. Nat. Hist. 1841.

Galactinia succosa Saccardo, Sylloge, VIII. 1889.

104. PEZIZA PUSTULATA Gmelin, Syst. Nat. 1791.

Octospora pustulata Hedwig, Musc. frond. 1787.

105. PEZIZA MORGANI Massee n. sp. — Ascophore cup-shaped, abruptly narrowed into a very short, slightly lacunose, stem-like base, entirely pale brown (when dry), minutely furfuraceous externally, substance thin, not brittle; hypothecium and excipulum formed of interwoven hyphae, passing into a parenchymatous cortex, 2-3 cm. across; asci cylindrical, apex rounded, not blue with iodine, 8-spored, 280-300 x 16-17 mic. spores obliquely 1-seriate, elliptic-fusiform, epispore delicately warted, hyaline, 2-guttulate, 37-40 x 10-12 mic.; paraphyses cylindrical, apex very slightly thickened.

On the ground in woods, Preston, O. A remarkably fine species, very distinct in the large, elliptic-fusiform warted spores.

106. PEZIZA PETERSII B. & C. N. A. Fungi. 1875. Massee, Berkeley's Types. 1896.

107. PEZIZA GRISEO-ROSEA Gerard, Bull. Buff. 1874.

108. PEZIZA ADAE Sadler, Trans. Bot. Soc. Edinburg. 1857.

I have referred to this species specimens of a large thin *Peziza* growing on the walls and bottom of a cellar.

109. OTIDEA LEPORINA Fuckel, Symb. Myc. 1869.
Peziza leporina Batsch, El. Fung. 1783.
Fungus auriculæ leporis forma. Mentzelius, Pug. Rar. 1682.
110. OTIDEA ONOTICA Fuckel, Symb. Myc. 1869.
Peziza onotica Persoon, Synopsis. 1801.
Peziza leporina Sowerby, Eng. Fung. 1797.
111. OTIDEA ALUTACEA Massee, Fungus Flora. 1895.
Peziza alutacea Persoon, Comm. 1800.
Elvela ochracea Schaeffer, Index. 1774.
112. OTIDEA AURANTIA Massee, Fungus-Flora. 1895.
Peziza aurantia Persoon, Comm. 1800.
Elvella coccinea Schaeffer, Index. 1774.
113. OTIDEA COCHLEATA Fuckel, Symb. Myc. 1869.
Peziza cochleata Linnaeus, Sp. Pl. 1753.

The specific name originates with Linnaeus, but the application of it has been various. Recent writers accept the interpretation of Dr. Cooke in Mycographia; in this the spores are smooth.

A very large *Peziza* grows in this region in early spring, agreeing in form, size, and color with this species, but the spores are minutely roughened. I have called it *Peziza badia*, Pers. (*Helvella cochleata*, Bolton); but this plant is said to grow in summer and autumn. It may be the plant called *Peziza umbrina* by Boudier, but the figure in Mycographia does not look like our plant.

114. ACETABULA VULGARIS Fuckel, Symb. Myc. 1869.
Peziza acetabulum Linnaeus, Sp. Pl. 1753.
Fungoides fuscum acetabuli forma, etc. Micheli, N. P. G. 1749.
115. LEOTIA STIPITATA Schroeter, Pflanzen. 1894.
Leotia viscosa Fries, Syst. Myc. 1823.
Tremella stipitata Bosc., Berl. Mag. 1811.

The pileus in this species is dark green; the spores subfusiform, more or less curved, 16-20 x 4-5 mic.

116. HELVELLA CRISPA Fries, Syst. Myc. 1823.
Phallus crispus Scopoli, Fl. Carn. 1772
Fungoides fungiforme crispum, etc. Micheli, N. P. G. 1749.
117. HELVELLA BARLAE Boudier & Patouillard in Journ de Bot. 1888.
There is a minute pubescence on pileus and stipe.
118. HELVELLA SULCATA Afzelius, Vet. Ac. Hand. 1783.
The specimens of this are 2-3 cm. in height.

119. *HELVELLA ELASTICA* Bulliard, Champ. 1785.
120. *HELVELLA GRACILIS* Peck, 24. N. Y. Rep. 1871.
121. *HELVELLA PEZIZOIDES* Afzelius, Vet. Ac. Hand. 1783.
Peziza helvelloides Fries, S. V. Scand. 1849.
Helvella helvelloides Masee, Fungus Flora. 1895.
122. *HELVELLA EPHIPPIMUM* Leveille, Ann. Sc. Nat. 1841.
123. *HELVELLA CRATERELLA* Quelet, Enchiridion. 1886.
Peziza craterella Persoon, Synopsis 1801.
Octospora craterella Hedwig, Musc. froud. 1787.

My note on the fresh specimen is as follows; Stipe 5-6 x 1-1.5 cm. Ascoma 4-7 cm. Asci 200-250 x 16-18 mic. Spores smooth, 18-20 x 12-14 mic. Compare with Masee's account of *Helvella macropus*.

124. *GYROMITRA ESCULENTA* Fries, S. V. Scand. 1849.
Helvella esculenta Persoon, Comm. 1800.

This species is recorded in Lea's Catalogue. I have never found it.

125. *GYROMITRA COSTATA* Cooke, Mycographia. 1879.
Helvella costata Schweinitz, Syn. Car. 1822.

I have two or three times found specimens of what appeared to be this species, but in no instance did they yield spores.

Mature specimens of this species and of *G. caroliniana* are greatly desired by mycologists; they do not seem to be known at the present time.

126. *GYROMITRA BRUNNEA* Underwood, Proceedings Indiana Academy of Science. 1893.

In the spring of 1895, this species grew abundantly in our vicinity. One specimen which we weighed, measured and figured, had dimensions as follows; Height 18 cm.; diameter of Pileus 14 cm.; thickness of stipe 8.5 cm.; weight 1 lb. 2 oz.

127. *MORCHELLA ESCULENTA* Persoon, Synopsis. 1801.
Phallus esculentus Linnaeus, Sp. Pl. 1753.
Boletus esculentus, rugosus, etc. Tournefort. I. R. H. 1719.

128. *MORCHELLA PATULA* Persoon, Synopsis. 1801.
Phallus patulus Schrank, Baier. Fl. 1789. Gmelin, Syst. Nat. 1791.

NOTES FROM MYCOLOGICAL LITERATURE. III.

W. A. KELLERMAN.

ANNALES MYCOLOGICI EDITI IN NOTITIAM SCIENTIAE MYCOLOGICAE UNIVERSALIS. Early in January 1903, the first number of a new periodical headed as above will appear, which proposes dealing thoroughly with the cultivation and furtherance of Mycological Science. So states a circular notice just received from H. Sydow, Berlin, W., Goltz str. 6., Germany. The periodical will be issued every other month; the size about 640 pp. per year; the price 25 Marks. At present only one North American and two French Mycological periodicals are published. We welcome the appearance of the fourth journal devoted to this widening field of botanical science. *Annales Mycologici* will contain in the main original "mycological articles of the first class," list of latest literature, critical reviews, etc.

A PLEA BY PROFESSOR UNDERWOOD FOR THE CONCENTRATION of the energy of Mycological Clubs and of isolated individuals on a limited number of genera, say *Boletus*, *Boletinus*, *Coprinus*, *Lactarius*, *Russula*, *Hygrophorus*, *Lentinus*, and *Marasmius*, was made in the January No. of *Torrey*, pp. 1-2 (1902), which it is to be hoped was numerously heeded during the year, and that abundant success may induce a continuation in the same line the next season.

NO END TO THE NEW HIGHER FUNGI—Prof. Peck, the veteran American Agaricologist, describing fourteen new species in the *Bulletin* of the Torrey Botanical Club, 29:69-74, Feb., 1902.

IN NO GROUP OF PLANTS IS CAREFUL STUDY IN THE FIELD SO necessary as with Mushrooms, says F. S. Earle, in *Torrey* (2:2-4. Jan. 1902); and besides valuable suggestions for the beginner and amateur Prof. Earle gives a commendable description blank.

BACTERIUM TRUTTAE, A NEW SPECIES pathogenic to Trout, is described by M. C. Marsh in *Science*, 16:706-7, 31 Oct., 1902. The organism was obtained from diseased brook trout and stands in specific causal relation to the disease; found only in domesticated or aquarium fish, never in wild trout from the natural waters. It is not pathogenic to warm-blooded animals.

C. A. J. OUDEMANS AND C. J. KONIG HAVE PUBLISHED a *Prodrome d'une Flore Mycologique* obtenue par la culture sur Geletine préparée de la terre humeuse du S'panderswoud, près Bussuns, in *Achives Néerlandaises des Sciences exactes et naturelles*. Forty-five species are figured—8 *Mucoraceae*, 3 *Sphaeropsidaceae*, 34 *Mucedineae*—on 33 colored plates. Thirty-one of the species are new with Latin diagnoses by Oudemans.

THE NIDULARIACEAE OF NORTH AMERICA are monographed by V. S. White, Bulletin of the Torrey Botanical Club, 29: 251-280, 5 pl. May 1902. *Cyathia* replaces the generic name *Cyathus*; a key to the eleven North American species is given; one species and one variety are new. *Crucibulum vulgare* Tol. (1844) the only species of this genus is to be called *C. crucibuliforme* (Scop.) White. *Nidula*, a new Genus is proposed; under it two species and one variety are given; the variety and one species are new. *Granularia* (Roth, 1791) replaces the generic name *Nidularia* (Fr. and Nord., 1817-18); a key to the three species is given; two of the species are new. A table showing the known distribution of the species is included.

AS ANIMAL MYCOPHAGISTS W. A. Murrill lists (Torreya, 2:25-6. Feb. 1902) a large sphingid larva (Virginia) — feeding on *Polyporus flavovirens*; red, or "pine," squirrel of Alaska in the region west of the Yukon River — living on [seeds of *Picea alba* and] mushrooms (three kinds of *Agarics* noticed) which they place in forks of branches, etc., visiting their collections every day in the winter for a meal.

QUITE EXTENDED "SUPPLEMENTARY NOTES ON THE Erysiphaceae," by Ernest S. Salmon, are published in the Bull. Torr. Bot. Club, 29:1-22, 83-109, Jan. and Feb. 1902. A considerable amount of further material has enabled the author "to continue the study of critical forms of several species; to investigate many cases of the reported occurrence of a species on an unusual host plant; and to extend the geographical range and add further hosts for many species. Several recent important papers are also critically reviewed, followed by a bibliography of 89 references, a host index, and a species index.

THE OHIO FUNGI EXSICCATI, the labels to the specimens of which contain a reprint of the original descriptions besides the customary data, is being issued by W. A. Kellerman, Ohio State University. Five fascicles, average of 20 specimens each, have been distributed, according to statement in Journal of Mycology, 8:167. Oct. 1902.

A PHYTOPATHOLOGICAL STUDY OF CANKER GROWTH on *Abies balsamea* in Minnesota by Alexander P. Anderson is reported in the Bulletin of the Torrey Botanical Club, 29:23-34. 2 pl. Jan. 1902. The cause of the disease was found to be *Dasyscypha resinarum* (Cooke & Phil.) Rehm., a species hitherto found in North Wales and in Hungary.

NOTES ON THE AMANITAS of the Southern Appalachians is the title of an eight-page pamphlet, author H. C. Beardslee, publisher Lloyd Library, devoted to the subgenus *Amanitopsis*. It contains a key to the seven species — *vaginata*, *baccata*, *farin-*

osa, stragulata, pubescens, nivalis, muscaria var. coccinea; descriptions and critical notes, occurrence, etc.; also three plates illustrating *A. baccata*, *A. stragulata*, and *A. muscaria* var. *coccinea*.

FIGURES AND DESCRIPTIONS OF SEVEN new species of *Puccinia* are published by W. H. Long Jr. in the Bulletin of the Torrey Botanical Club, 29:110-16, Feb. 1902.

HERMANN VON SCHRENK NOTICES BRIEFLY (Botanical Gazette, 34:65, July, 1902) a root rot of apple trees caused by *Telephora galactina* Fr., and promises an extended account of the occurrence and growth of the latter before long.

AN EXCELLENT ACCOUNT BY L. R. JONES, of a Soft Rot of Carrot and other vegetables, caused by *Bacillus carotovorus* Jones, is given in the An. Rep. Vt. Agr. Exp. Sta. 1899. A three-page summary precedes the extended article, under the subheads: Occurrence and character of the disease; Pathogenesis; Morphological characters; and Physiological characters. A preliminary report and the publication of *Bacillus carotovorus* Jones n. sp. was printed in the Centralblatt für Bakteriologie, Parasitenkunde u. Infektions-Krankheiten, Zweite Abt. 7:12-21, 61-68, 5 and 26 January, 1901.

THE DESTRUCTIVE FUNGUS, *PENICILLIUM DIGITATUM*, ATTACKS ONLY CITRIOUS FRUITS, as stated by C. W. Woodworth under the title of "Orange and Lemon Rot." California Agr. Exp. Sta. Bull. 139:1-12, February, 1902.

A PRELIMINARY LIST OF MAINE FUNGI, by Percy LeRoy Ricker (pp. 1-87, April, 1902), contains 1136 species. The arrangement of the orders and families is that of Saccardo's Sylloge, the genera and species arranged alphabetically. It is prefaced with a historical sketch, list of works treating of the Maine species, general characters and classification of Fungi; and supplemented with an index to genera and an index to hosts.

ERIKSSON'S WORK ON THE TIMOTHY RUST.—An interesting article by Jakob Eriksson (Oefversigt af Kongl. Vetenskaps-Akademiens Förhandlingar 1902. N:o. 5) having the title, "Ist der Timotheengrastrost eine selbständige Rostart oder nicht," recalls his infection experiments in 1891-3 as a result of which the species *Puccinia phleigratensis* Cr. & Hen. was established (1891), and details numerous additional experiments made in 1892-1900. This species has almost completely lost its power to infect Barberry. It is found occasionally (in experimentation) on *Festuca elatior*, Oats, Rye, and *Phleum michellii*. Eriksson includes it in the category of Rust species "nicht scharf fixiert," of which he has listed also the following: "*Puccinia graminis* f. sp. *Tritici* auf *Triticum vulgare* (*Hordeum vulgare*, *Secale*

cereale und *Avena sativa*); *P. triticina* auf *Triticum vulgare* (und *Secale cereale*); *P. bromina* auf *Bromus mollis*, *B. arvensis* etc. (und *Secale cereale*); und *P. agropyrina* auf *Triticum repens* (*Secale cereale* und *Bromus arvensis*). Zu derselben Kategorie wäre auch in Folge des oben mitgetheilten *P. Phlei-pratensis* auf *Phleum pratense*, *Festuca elatior* (*Phleum michelii*, *Avena sativa* und *Secale cereale*) zu rechnen." Referring again to the peculiarities of this species the following conclusion is recorded, namely, that perhaps "*P. phlei*—*pratensis* ursprünglich aus *P. graminis* entstanden sei, und dass sie sich allmählich auf dem seit langer Zeit im Grossen gebauten gewöhnlichen Timotheengrass zu einer selbständigen Art differenziert habe, selbständig insofern, dass sie die ursprüngliche aecidienerzeugende Fähigkeit verloren, die innere Natur jedoch so beibehalten habe, dass sie, wenn auch schwierig, auf den Hafer und Roggen zurückgehen kann. Weniger vorgeschritten aber denke man sich die Differenzierung an den seltenen, nur zufällig in den botanischen Gärten kultivierten *Phleum*-Arten, welche durch daneben angehautes Getreide direkt angesteckt worden sind. Der Pilz hat hier keine Gelegenheit gehabt, sich Generation nach Generation zu einer Form mit specifischen Eigenschaften herauszubilden und zu fixieren."

BINUCLEATE CELLS IN CERTAIN HYMENOMYCETES is the title of an important article in the January No. of the Botanical Gazette (33:1-25, pl. 1, January, 1902), by Robert A. Harper, which from its length can not be here properly summarized. Two sentences however may be quoted. "It must not be assumed without further evidence that the Rusts are primitive Basidiomycetes." . . "The binucleate condition of the hyphal cells suggests very strongly that Rusts and Basidiomycetes must have arisen from some ancestral type characterized, at least in some stage of its development, by the possession of binucleate instead of uninucleate or multinucleated vegetative cells."

A VERY INTERESTING AND IMPORTANT preliminary report of work done during the last two years by John L. Sheldon, at the University of Nebraska, in co-operation with the U. S. Dept. of Agr., on the Rusts of Asparagus and Carnation—and incidentally on *Darluca*—is given in Science, N. S. 16:235-7. 8 Aug. 1902. The account pertains to inoculation experiments. The period of incubation in the greenhouse varied from 18 to 8 days. "When the mean daily temperature in the greenhouse was 69° and the average hours of sunshine were five, it required fourteen days for the sori to appear after an inoculation was made; and when the temperature increased to 76° and the number of hours of sunshine increased to 6.3, only eight days were required; the period of incubation being in each case inversely as the temperature and the hours of sunshine." Only vigorous

plants were found to be readily susceptible to inoculation. Mr. Sheldon also demonstrated that the Carnation Rust is local instead of being distributed throughout the plant, and that certain varieties are practically immune. It is interesting also to note that observations have led to the opinion that *Darluca filum* Cast. is not parasitic on the Rust, its saprophytic tendencies having been demonstrated by growing it on various culture media. "There are strong indications that it may be parasitic on *Asparagus*."

EUROPEAN FUNGUS FLORA, AGARICACEAE, George Massee, F. L. S., is the title of a recent important book of 274 pp., published by Duckworth & Co., London. For each of the five primary divisions of the group (based on the color of the spores as seen in mass), a concise synoptical key to the genera is given, followed by descriptions of 2750 European species (of which 1553 are British). "The idea of this work is to give the essential characters of each species as presented by pileus, gills, stem and spores respectively." No figures are given. The author thinks that "a lengthy and laboured description suggests lack of power to grip essentials on the part of the compiler, and does not as a rule facilitate the recognition of the species intended." An illustration or two will show the character of this treatise. For example, p. 7, under the genus *Lepiota* is given this description:—

"PROCERA, Scop. P. soon expanded, umbonate, with brownish scales, 10–25 cm.; g. free, crowded; s. 12–20 cm., base thickened, brownish, transversely cracked, ring free; sp. 12–15 x 8–9. Edible."

On p. 205, under the genus *Agaricus* occurs the following paragraph:—

CAMPESTRIS, L. 6–12 cm. convex then plane, floccosely silky or fibrillose, whitish, flesh reddish-brown when cut; g. close to stem, subliquescent, fleshy then umber; s. stuffed, even, white, ring median, torn; sp. 7–8x5–6. Edible.

Var. *alba*, Berk. P. rather silky white; s. short.

Var. *hortensis*, Cke. P. fibrillose or squamulose, brownish. The variety commonly cultivated in England. [Eleven other vars. given under this species.]

A NEW MUSHROOM FOR THE MARKET is reported by H. Webster in *Rhodora*, 4:199, October, 1902. The plant referred to is *Lepiota naucina* — and this with several species as *Agaricus campestris*, *Coprinus atramentarius*, *Coprinus comatus*, *Tricholoma personatum*, have found a ready sale in the Boston market.

PROF. DR. P. MAGNUS gives in the *Berichte der Deutschen Botanischen Gesellschaft* (20:291–296, 1 pl. 1902) an account of a species of a root-inhabiting, gall-producing *Urophlyctis* which is the cause of a destructive disease of *Medicago sativa*, or Lucerne. He refers to his previous assertion, dass die Gattung *Urophlyctis* Schroet. eine gute Gattung ist und scharf von den Gattungen *Physoderma* und *Cladochytrium* zu trennen ist. He also

shows that the species in question is different from *Urophlyctis coproides* (Trab.) P. Magn., on *Beta vulgaris*, and *Urophylctis pulposa* (Wall.) Schroet., on *Chenopodium* and *Atriplex*; the name proposed is *Urophlyctis alfalfae* (v. Lagerheim olim) P. Magnus. The galls are rounded protuberances; when sectioned large brown irregular figures may be seen; these correspond to cavities filled with the resting spores.

THE BITTER ROT OF APPLES is the title of Bulletin No. 77 (Ill. Agr. Exp. Sta.), July 1902, by Thomas J. Burrill and Joseph C. Blair. The authors say it is essentially a hot weather disease. The second spore-forms were not found in exposed apples but the fungus ordinarily retains its vitality in a dormant state in the winter, and in May or later, continues its growth. It was also found that spores from the *cankers* on the limbs could be used successfully in inoculation experiments. This seems to be the first verified case to show that there is a connection between *cankered* places on the limbs and the disease on the fruit. [To the reviewer it would seem desirable that the scientific names of the fungi or forms discussed in a Bulletin should be given in parentheses or as foot notes.]

HERMANN VON SCHRENK AND PERLEY SPAULDING give a brief preliminary account (Science, N. S. 16:669-670, Oct. 31, 1902) of observations and experiments showing "a causal relation between apple cankers found in numerous orchards and the bitter rot disease, and that it is very probable that this fungus is capable of living both in the bark and in the fruit of the apple." In cultures made from the cankers *Gloeosporium fructigenum* appeared; the spores inoculated into living apple branches gave rise to apple cankers with pycnidia and spores of *Gloeosporium fructigenum*, and these spores inoculated into apple produced the bitter rot disease. To the reviewer this would seem a confirmation of results obtained by Burrill & Blair.

HOWARD J. BANKER GIVES A historical Review of the proposed genera of the Hydnaceae, Bull. Torr. Bot. Club, 29: 436-448, July 1902; he proposes *Tylodon* based on *T. friesii* (*Radulum pendulum* Fr. El. Fung. 149) and *Eltheiroduon* based on *E. fimbriatum* (*Odontia fimbriata* Fr) as generic names to replace respectively *Radulum* and *Odontia*. In the summary 71 generic names are enumerated; of these 32 are free to be used.

AN EXTENDED ARTICLE ON THE TOXIC PROPERTIES of some copper compounds, by Judson F. Clark, is published in the Jan. No. of the Botanical Gazette (33: 26-48 1902). Several hundred cultures with fifteen species of Fungi were made and fully described. He says that all experiments go to show that the Bordeaux Mixture is effective from the day it is applied. As to its toxicology: "The solution of that part of the $\text{Cu}(\text{OH})_2$ of

Bordeaux Mixture which under orchard conditions is of fungicidal value, is chiefly accomplished by the solvent action of the fungous spores themselves, for they have power to dissolve sufficient copper to kill themselves."

IN THE BOTANISKA NOTISER for 1902 (pp. 113-128 & 161-179) Tycho Vestergren gives a "Verzeichniss nebst Diagnosen und Kritischen Bemerkungen zu meinem Exsiccatenwerke, *Micromycetes rariores selecti*," Fasc. 11-17. A dozen new species are described.

THE ARTICLE BY DAVID GRIFFITHS, concerning some West American Fungi, Bull. Torr. Bot. Club, 29: 290-301, May 1902, deals with seventeen parasitic fungi belonging to the genera *Tilletia*, *Ustilago*, *Sorosporium*, *Gymnoconia*, *Puccinia*, *Aecidium*, and *Claviceps* (?); twelve of the species are described and named as new to science.

IN SCIENCE, (N. S. 16: 434-5) SEPT. 12, 1902, P. J. O'Gara gives some Notes on Canker and Black-Rot,, the former on *Rhus glabra* caused by *Sphaeropsis rhoina* (Schw.) Starb. In-completed experiments are reported to determine whether *Sphaeropsis rhoina* of the Sumac and *Sphaeropsis* of the apple may not be the same. The facts already established "go to show that *Sphaeropsis rhoina* will cause black-rot in the fruit of the apple and will also produce the typical 'canker' on the branches and limbs just as readily as *Sphaeropsis malorum*. Although the evidence is not complete it is probable that the two species are identical."

AN ABSTRACT OF A PAPER by Dr. V. C. Vaughan on the Nature of the specific Bacterial Toxins is given in Science, N. S. 16: 312-5, Aug. 22, 1902.

A LIST OF BAR HARBOR (MT. DESERT) FUNGI, about 255 in number is given by V. S. White, Bull. Torr. Bot. Club, 29:550-563, Sept. 1902. Most of the interesting list are the higher fungi—eight of which are new species, six by Peck and two by Banker. The starred species, 120 in number, are not found in Ricker's List of Maine Fungi (April 1902).

THE PREVENTION OF MOLDS ON CIGARS, by Rodney H. True, is a short article in Science, N. S. 16: 115-6, July 18, 1902, in which it is shown that this affection pertains only to cigars whose wrapper-leaf has been treated with tragacanth paste, and is preventable by making the latter with a saturated solution of boracic acid instead of water.

INVESTIGATIONS ON A BACTERIAL SOFT-ROT of certain Cruciferous Plants and *Amorphophallus similense* by H. A. Harding and F. C. Stewart are reported in Science, N. S. 16: 314-5, Aug. 22, 1902.

NEOCOSMOSPORA VASINFECTA VAR. TRACHEIPHILA ERW. SM., the cause of the Wilt Disease of the Cowpea, its characters, distribution, extent of loss, preventive measures, and experiments, are fully discussed by W. A. Orton, in U. S. Dept. Agr. Bureau Pl. Industry, Bull. 17:7-22, pl. 1-4, 22 April, 1902.

EDGAR W. OLIVE HAS PUBLISHED in the Proc. Boston Soc. Nat. Hist. 30:415-513, pl. 5-8, August, 1902, a monograph of the Acrasieae — a small group of saprophytic organisms which have been associated with the Myxomycetes. There are seven genera and twenty species, twelve of which occur in the United States.

THE STUDIES IN NORTH AMERICAN DISCOMYCETES by Elias J. Durand are continued with valuable results; the first paper was on the genus *Holwaya* (Bull. Torr. Bot. Club, 28:349-355, June, 1901), the second on some new or noteworthy species from central and western New York (L. c. 29:458-165, July, 1902). Three new species are described in the last paper.

A LIST OF FOURTEEN OF THE MORE IMPORTANT MOULDS injurious to foods is given by Mary Dresbach in the June number of the Ohio Naturalist (2:288-9), 1902. The orders represented are Bacteriales, Mucorales, Saccharomycetalis, Aspergillales and Moniliales.

THE 22ND ANNUAL REPORT OF THE NEW JERSEY EXPERIMENT STATION for 1901 (issued in 1902) contains an extended account of the work by the botanist, B. D. Halsted. The mycological topics briefly touched on are the Asparagus Rust, Experiments with Pear Blight, Ergot upon Grass, Notes on Corn Smut, the Blight of Cumumbers, the Mildew of the Grape, Tulip Mould, and Fungi as related to weather.

IN THE NOTE ON *BOLETUS BETULA* (182, Lloyd's Myc. Notes, 10:97, September, 1902) H. C. Beardslee says that three species of shaggy-striped Boleti have been described by American Mycologists — *B. betula* by Schweinitz, *B. russelli* by Frost, but these seem to be one and the same thing; and he adds that Mr. Lloyd regards *B. morgani* as a state of *B. betula* — hence this would reduce these three species to one and unite them "under the oldest and best name," viz., *B. betula*.

MR. C. G. LLOYD HAS DISTRIBUTED MYCOLOGICAL NOTES No. 10, dated September, 1902. The notes are: 182 — *Boletus betula* (by H. C. Beardslee); 183 — *Hypocrea alutacea*; 184 — Looking backwards; 185 — An inexcusable blunder; 186 — Acknowledgement of specimens received since last report; 187 — How little we know; 188 — More about Geasters; 189 — *Gyrographmium delilei*; and 190 — Gathering Puff-balls. Figures are given of *Boletus betula* and *Hypocrea altacea*.

TORRENDIA, A NEW GENUS OF HYMENOGASTRACEAE, and twelve new species of the higher fungi are described by I. Bresadola (*Mycetes Lusitanici Novi*), *Atti I. R. Acad. Agiati*, II, 8:129-133. 1 pl. 1902.

A BULLETIN OF 43 pages, 3 plates, author Margaret C. Ferguson, containing a preliminary Study of the Germinatoin of *Agaricus compestris* and other Basidiomycetous Fungi, was issued June 14, 1902, by the Bureau of Plant Industry, U. S. Dept. Agr. Besides the record and explanation of the tests, there is given also a Historical Review of the literature, 1842 to 1901, (6 pages) and a Bibliography (2 pages).

HERMANN VON SCHRENK IS THE AUTHOR of Bulletin No. 14, Bureau of Plant Industry, issued March 25, 1902, entitled the Decay of Timber and Methods of preventing it. It contains 96 pages, 18 plates and numerous text figures. The scope of the Report is as follows: (1) Structure of Timber and its mechanical and chemical nature; (2) Factors which cause decay of wood; (3) Timber preservation; (4) Account of an experiment to test the value of preservative processes; (5) Report of an inspection trip to Europe for the purpose of investigating the results of timber impregnation; (6) Conclusions and recommendations.

THE OFFICE OF THE PATHOLOGIST AND PHYSIOLOGIST, Bureau of Plant Industry, offers to the State Agricultural Experiment Stations and other interested workers such specimens of fungi as they may select from a list which has been prepared by Flora W. Patterson, Mycologist, and sent out February 3, 1902 (Bulletin No. 8). The general arrangement and the nomenclature correspond mainly with Saccardo's *Sylloge Fungorum*. The list contains 543 species, often several hosts being given.

GENERIC NOMENCLATURE IS DISCUSSED BY C. L. SHEAR in the March number of the *Botanical Gazette* (33:220-9, 1902), the remarks relating especially to Fungi. His apology if any were needed is as follows: "but there is no student of plant life in any of its multitudinous phases but must have occasion at some time to use plant names, and hence should be interested to some degree, at least, in any sincere effort to secure stability and uniformity in nomenclature." Mr. Shear points out the fatal difficulties of the "species majority method," and the "residue method." The type method is urged as desirable and practicable.

PROFESSOR UNDERWOOD GIVES A GENERAL ACCOUNT of the Bracket Fungi in the June No. of *Torreyia* (2:87-90, 1902), mentioning about two dozen species and incidentally remarking that a certain species "has passed as *Polyporus lucidus*, which is a wholly different species," and that *P. leucophaeus* "has masqueraded in this country under an incorrect name as *P. applanatus*."

ABIGAIL A. O'BRIEN CONFIRMS Dr. Duggar's assertion that in case of some fungi the mycelium may be as resistant to moist heat as are the spores, by a series of experiments with *Aspergillus flavus*, *Botrytis vulgaris*, *Rhizopus nigricans*, *Sterigmatocystis nigra* and *Penicillium*, reported in the Bulletin of the Torrey Botanical Club (29:170-2), March 1902) under the title: Notes on the Comparative Resistance to High Temperature of the Spores and Mycelium of Certain Fungi.

ELSIE M. KUPFER REPORTS A CRITICAL STUDY of *Urnula* and *Geopyxis* in the Bulletin of the Torrey Botanical Club, 29:137-144. 1 pl. March 1902. The conclusion of the whole matter is: *Urnula craterium* Fr. represents a distinct genus from *Geopyxis*; *Urnula terrestris* (Niessl) Sacc. is not allied to *U. craterium* and is to be called *Podophacidium xanthomelan*; *Urnula geaster* Peck forms a new genus, *CHORIOACTIS*, and is designated as *C. geaster* (Peck) Kupfer.

THE APOTHECIA REPRESENTING THE ASCIGEROUS stage of *Sclerotinia fructigena* (Pers.) Schroet. (of which *Monilia fructigena* Pers. is the conidial form) were unknown till discovered on April 10th this year by J. B. S. Norton, who has given a note in Science (N. S. 16:34 4 July 1902) relative to the same, and an extended account of the observations and cultures with illustrations in Trans. Acad. Sci. St. Louis, 12:91-7. 4 pl. 25 Aug. 1902.

THE KEYS TO THE NORTH AMERICAN SPECIES of various genera of Fungi, on the dichotomal plan, which F. S. Earle is publishing in *TORREYA* (1902) are to be highly commended to beginners in the study of those groups. The following have been issued: *Lactarius*, *Hypholoma*, *Coprinus*, *Bolbitius*, *Gomphidium*, *Nyctalis*, *Limacium*, *Hygrophorus*, *Russula*.

THE OCCURRENCE OF THE LARGER FORM of *Boletus felleus* on stumps, at Alstead, N. H. is noted by H. Webster, *Rhodora*, 4:187-8, Sept. 1902.

F. S. EARLE GIVES A NOTE in *Torreyia* (2:159-160, Oct. 1902) concerning a "much-named fungus," pointing out that Cooke and Ellis's *Fusicladium fasciculatum* published in *Grevillea* in 1878 (6:88) had been renamed *Scolecotrichum euphorbiae* by Tracy and Earle, *Piricularia euphorbiae* by Atkinson, *Cercosporidium euphorbiae* by Earle, *Scolecotrichum fasciculatum* by Shear; and now it is *Passalora fasciculata* in the judgement of the same. Prof. Earle also transfers his *Cercosporidium helleri* to *Passalora*.

VOLVARIA VOLVACEA FOUND IN EXTRAORDINARY abundance at Lawrence, Massachusetts, in a bed formed by dumping soiled cop, roving waste, bits of rag and paper, and night soil affords Francis H. Silsbee an opportunity of giving an amplified de-

scription of this interesting species, *Rhodora*, 4: 3-5, January 1902. In the same number (pp. 5-7) Hollis Webster also comments on the same and adds some notes as to *Volkaria bombycina*, "as beautiful and striking agaric as the woods produce," and *V. speciosa*, grayish and viscid, said to be edible, reported poisonous by Bresadola.

Dr. L. O. Howard reports in the Yearbook of the U. S. Department of Agriculture for 1901 (pp. 459-470) some experimental work with Fungous Diseases of Grasshoppers, but he says it is "nothing more than a report of progress" and that "the results obtained so far do not justify very sanguine hopes." The fungi more or less successfully used were: a species of *Mucor* (work in South Africa), perhaps also *Empusa grylli*, and *Sporotrichum globuliferum* (S. A. and U. S.).

ALBERT SCHNEIDER REPORTS (*Botanical Gazette*, 34:109-113, July 1902) success in obtaining *Rhizobium mutabile* in artificial culture media, and illustrates the forms seen on a full-page plate. Tubercles were used from young seed-grown plants of *Melilotus alba*. The organism develops slowly, is essentially aerobic, devoid of all active motion, undergoes great change in form and size, apparently does not develop true spores.

CLATHRUS COLUMNATUS, A TROPICAL SPECIES of Phalloid, was found in November last by Mr. F. Silsbee at Lawrence, Massachusetts, as reported by H. Webster in *Rhodora*, 4:134-5, June 1902.

MONOGRAPHIA UREDINEARUM BY P. & H. SYDOW, VOL. I, FASC. I, has just been issued from the Leipzig firm of Fratres Bornträger. The work contemplated by these uredinists, and of which the first Fasciculus is a part, shall "in erster Linie der Systematik dienen, also vor allem das Auffinden und Bestimmen einer Art so viel als möglich erleichtern soll;" accordingly the division into subgenera or sections (*Eupuccinia*, *Heteropuccinia*, etc.) have not been regarded, but all of the species are arranged according to the host plants. The 192 pages issued includes the *Puccinia* on *Compositae*, the genera of hosts arranged in alphabetical order. The descriptions are Latin, the additional notes in German. Many figures drawn by the authors, illustrate the rarer species. They are outline figures, not shaded or colored, and all drawn to the same amplification, namely, about 480. Fast sämtliche Diagnosen sind nach Untersuchung von original-exemplaren entworfen. As to the synonymy, the authors say: Auf die oft so verworrene Synonymik haben wir das grösste Gewicht gelegt und dieselbe so ausführlich wie nur möglich gegeben. It is expected that 3 volumes will complete the work, and all the parts issued in the course of three or four years. The first volume is to contain only the genus *Puccinia*.

INDEX TO NORTH AMERICAN MYCOLOGY.

Alphabetical List of Articles, Authors, Subjects, New Species and Hosts, New Names and Synonyms.

(Continued from page 103.)

W. A. KELLERMAN.

Previous installments of this Index (mainly for the literature of 1901) were given in the May and June Nos., current year. That given below is for the most part an index to the literature for 1902. It will be continued in the next number of the JOURNAL.

A *separate* — printed on one side of the page only — of the previous installments combined, was issued under the heading "FIRST REPRINT." In a similar manner the present installment will be issued as the "SECOND REPRINT." The price for each Reprint is fixed at 25 cts. These will be sent as issued to those who request their names to be placed on a permanent mailing list for the same.

It has seemed desirable to extend the scope of the Index to include the North American literature of Lichenology. Synonyms — at least the more important ones — will also be listed.

Botanists and Librarians will be able soon to determine the utility of this Index — especially if they clip the items from the Reprints and paste them on regular *library cards* — only a trifling amount of labor and time being required for this purpose. If orders are numerous not only will the mycological literature of the present be promptly listed, but an effort will eventually be made to include as well all that pertains to the time previous to Jan. 1st, 1901.

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Jour. Mycol. 8:16. May 1902.

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ACALLOMYCES homalotae Thaxter n. sp., on the superior surface of the abdomen of Hemalota sp. Proc. Am. Acad. Arts & Sci. 38:24. June 1902.

ACER, old bark, host to Acontium album Morgan n. sp. Jour. Mycol. 8:5. May 1902.

ACOMPSOMYCES atomariae Thaxter n. sp., on elytra of Atomaria ehippiata Zimm. Proc. Am. Acad. Arts & Sci. 38-22. June 1902.

ACOMPSOMYCES pauperculus Thaxter n. sp., on elytra, prothorax, and legs of Atomaria sp. Proc. Am. Acad. Arts & Sci. 38-33. June 1902.

- ACONTIUM Morgan gen. nov. Jour. Mycol. 8:4. May 1902.
- ACONTIUM album Morgan n. sp., on the inner side of old bark of Acer. Jour. Mycol. 8:4. May 1902.
- ACONTIUM minus Morgan n. sp., on old pod of Gleditsia. Jour. Mycol. 8:5. May 1902.
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- AECIDIUM albiperidium Arthur n. sp., on Ribes cynosbati L. Jour. Mycol. 8:53. June 1902.
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- AECIDIUM dakotensis Griffiths n. sp., on Aquilegia canadensis L. Bull. Torr. Bot. Club, 29:300. May 1902.
- AECIDIUM fraxini Schw., syn. of *Puccinia fraxinata*, q. v.
- AECIDIUM grindeliae Griffiths n. sp., on Grindelia squarrosa Dunal. Bull. Torr. Bot. Club, 29:299. May 1902.
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- AECIDIUM jacquemontiae E. & E. n. sp., on leaves of Jacquemontia pentantha. Jour. Mycol. 8:11. May 1902.
- AECIDIUM rubellum Pers., syn. of *Puccinia rubella*, q. v.
- AECIDIUM rumicis Hoff., syn. of *Puccinia rubella*, q. v.
- AECIDIUM zephyranthis Shear n. sp., on leaves of Zephyranthes sp. Bull. Torr. Bot. Club, 29:454. July 1902.
- AGARICUS campestris, a preliminary study of the Germination of the Spores of, and other Basidiomycetous Fungi. Margaret C. Ferguson. U. S. Dept. Agr. Bureau of Plant Industry, Bull. No. 16:143. 3 pl. 14 June 1902.

- AGARICUS campestris, germination of spores of, *see* Ferguson, Margaret, *A Preliminary Study*, etc.
- AGARICUS cretaceus Atkinson n. sp., growing in leaf mold in woods. Jour. Mycol. 8:110. October 1902.
- AGARICUS sterlingii Peck n. sp. Bull. Torr. Bot. Club, 29:73. Feb. 1902.
- AGROPYRON occidentale Scribn., host to Tilletia earlei Griffiths n. sp. Bull. Torr. Bot. Club, 29:291. May 1902.
- AILANTHUS glandulosa, dead shoots, host to Didymella ricini E. & E. Jour. Mycol. 8:67. June 1902.
- ALECTORIA, *see* Lichens-Alectoria, Evernia.
- ALISMA plantago, host to Pleospora alismatis E. & E. n. sp. Jour. Mycol. 8:16. May 1902.
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- AMANITA muscaria var. coccinea Beardslee n. var. Notes on the Amanitas of the Southern Appalachians. Part 1, sub-genus Amanitopsis. 8 September 1902. H. C. Beardslee.
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JOURNAL OF MYCOLOGY

A Periodical Devoted to North American Mycology. Issued in February, May, October and December. Price, \$1.00 per Year. To Foreign Subscribers \$1.10. Edited and Published by

W. A. KELLERMAN, PH. D., COLUMBUS, OHIO.

NOTES.

The very cordial reception of the Journal of Mycology, revived after a long suspension, has been exceedingly gratifying to the editor. The kindly support by contributors and subscribers to Volume 8 is gratefully acknowledged. I must say to inquiring friends too, that "*it does pay*" and I am well satisfied since the income pays a goodly fraction (nearly half) the cash cost of publication.

The first No. of the current Volume contained 48 pages; it was necessary to enlarge the second No. to 56 pages; the third No. was 64 pages, and the present No. contains 80 pages. But I hasten to say that the editor is not an unlimited and unconditional expansionist—so that further Nos. will doubtless keep within proper bounds.

It is to be regretted that Vols. 1-7 are wholly exhausted. It may be well to reprint a Summary Volume, reproducing in full all the *original descriptions* contained in Vols. 1-7, and the titles and abstracts of all the articles. This could probably be furnished for \$2.00.

Mycologists are invited to use the pages of the Journal of Mycology freely and should any question arise as to the scope and purpose of this periodical it will be settled by a sympathetic perusal of pages 1-3.

Contributors are kindly asked to note the months for the quarterly issue of the Journal, and send copy by the 15th or latest 20th of the preceding month.

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